

# ACRYLITE SuPure™ H15

## Polymethyl Methacrylate Acrylic

### Evonik CYRO LLC

#### Product Description

ACRYLITE® SuPure™ acrylic polymer is an exceptional pure polymer designed for applications that demand maximum cleanliness. Our proprietary purification process starts at CYRO's manufacturing plant and extends all the way to your facility's processing point - for a total purity solution. It ensures a polymer free of dust, fines and contaminants that consistently delivers exceptional clarity and eliminates costly defects.

Ideal for automotive market applications such as instrument cluster lenses, interior lighting, and telematic covers, ACRYLITE SuPure polymer offers light weight and excellent impact strength as well as the high-quality light transmittance that the visible eye needs under varying lighting conditions. ACRYLITE SuPure polymer is available in three automotive grades for a wide range of molding and extrusion capabilities.

ACRYLITE SuPure polymer offers better clarity and quality of light transmission than glass. Its molding and thermoforming capabilities give you more fabrication options. At half the weight of glass, its outstanding impact resistance makes it a safer alternative.

Specially engineered for a variety of applications such as optical lenses, bathware bars and rods, lighting, and retail point-of-purchase displays, ACRYLITE SuPure polymer is available in five optical grades for a wide range of molding and extrusion capabilities.

The ACRYLITE SuPure polymer solution includes a choice of two packaging systems that offer total end-to-end purity. These delivery systems guarantee a consistently superior product which will improve overall manufacturing costs, processes, and performance - from beginning to end.

#### General

|                   |                                                     |                                         |                                               |
|-------------------|-----------------------------------------------------|-----------------------------------------|-----------------------------------------------|
| Material Status   | • Commercial: Active                                |                                         |                                               |
| Availability      | • North America                                     |                                         |                                               |
| Features          | • Good Impact Resistance<br>• High Clarity          | • High Heat Resistance<br>• High Purity |                                               |
| Uses              | • Automotive Applications<br>• Bathroom Accessories | • Decorative Displays<br>• Lenses       | • Lighting Fixtures<br>• Optical Applications |
| Agency Ratings    | • EC 1907/2006 (REACH)                              |                                         |                                               |
| Appearance        | • Clear/Transparent                                 |                                         |                                               |
| Forms             | • Pellets                                           |                                         |                                               |
| Processing Method | • Extrusion                                         | • Injection Molding                     |                                               |

| Physical                                 | Nominal Value Unit     | Test Method |
|------------------------------------------|------------------------|-------------|
| Specific Gravity                         | 1.19 g/cm <sup>3</sup> | ASTM D792   |
| Melt Mass-Flow Rate (MFR) (230°C/3.8 kg) | 2.2 g/10 min           | ASTM D1238  |
| Molding Shrinkage - Flow                 | 0.40 to 0.70 %         | ASTM D955   |
| Water Absorption (Saturation)            | 0.30 %                 | ASTM D570   |

| Mechanical               | Nominal Value Unit | Test Method |
|--------------------------|--------------------|-------------|
| Tensile Modulus          | 3240 MPa           | ASTM D638   |
| Tensile Strength (Yield) | 67.6 MPa           | ASTM D638   |
| Tensile Elongation       |                    | ASTM D638   |
| Yield                    | 4.0 to 6.0 %       |             |
| Break                    | 4.0 to 6.0 %       |             |
| Flexural Modulus         | 3380 MPa           | ASTM D790   |
| Flexural Strength        | 117 MPa            | ASTM D790   |

| Impact                              | Nominal Value Unit | Test Method |
|-------------------------------------|--------------------|-------------|
| Notched Izod Impact (23°C, 6.35 mm) | 16 J/m             | ASTM D256   |

| Hardness                    | Nominal Value Unit | Test Method |
|-----------------------------|--------------------|-------------|
| Rockwell Hardness (M-Scale) | 95                 | ASTM D785   |

| Thermal                                                | Nominal Value Unit | Test Method             |
|--------------------------------------------------------|--------------------|-------------------------|
| Deflection Temperature Under Load<br>1.8 MPa, Annealed | 95.0 °C            | ASTM D648               |
| Vicat Softening Temperature                            | 105 °C             | ASTM D1525 <sup>2</sup> |
| CLTE - Flow (0 to 100°C)                               | 0.00061 cm/cm/°C   | ASTM D696               |

| Optical          | Nominal Value Unit | Test Method |
|------------------|--------------------|-------------|
| Refractive Index | 1.490              | ASTM D1003  |
| Transmittance    | 92.0 %             | ASTM D1003  |
| Haze             | < 1.0 %            | ASTM D1003  |
| Yellowness Index | < 1.0 YI           | ASTM D1003  |